

Amendment to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application. Please enter new claims 23-32.

Listing of Claims:

1. – 13. (Canceled)

14. (currently amended) A method of forming an insulating film on a substrate to reduce nitride consumption during manufacture, the method comprising:

placing a substrate having a nitride layer thereon in a reaction chamber;

providing a silicon source, an oxygen source, a boron source and a phosphorous

source for chemical vapor depositing a doped silicate glass layer over the nitride

layer; and

prior to mixing the flows of the silicon, oxygen, boron and phosphorous sources,

stabilizing individually the flows of the silicon, oxygen, boron and phosphorous

sources ~~prior to providing the sources into the reaction chamber;~~

injecting the silicon source, the oxygen source and the boron source into the chamber

for a predetermined period of time to form a borosilicate glass layer over the

nitride layer on the substrate; and

injecting the phosphorous source into the chamber while continuing injecting the

silicon, oxygen and boron sources into the chamber to deposit a

borophosphosilicate glass layer over the borosilicate glass layer.

15. (original) The method of claim 14, wherein the predetermined period of time to deposit a borosilicate glass layer over the nitride layer is in a range of approximately 3-30 seconds.

16. (original) The method of claim 14, wherein the predetermined period of time to deposit a borosilicate glass layer over the nitride layer is about 10 seconds.

17. (original) The method of claim 14 further comprising annealing the borophosphosilicate glass layer at a temperature in a range of approximately 750 °C to 1050 °C in an ambient selected from the group consisting of steam ambient, water ambient and ambient formed by in-situ reaction of H₂ and O₂.

18. (currently amended) A method to control nitride consumption during integrated circuit manufacture, the method comprising:

placing a substrate having a nitride layer in a reaction chamber;

providing a silicon source, an oxygen source, a boron source and a phosphorous source;

injecting the silicon, oxygen and boron sources into the reaction chamber while delaying injecting the phosphorous source in the reaction chamber for a predetermined period of time to deposit a boron-rich silicate glass film over the nitride layer, the predetermined period of time selected relative to the desired

nitride layer consumption during a subsequent anneal, wherein the desired nitride layer consumption is at least a portion of the nitride layer; and
injecting the phosphorous source in the reaction chamber following the predetermined period of time while continuing injecting the silicon, oxygen and boron sources into the reaction chamber to deposit a borophosphosilicate film over the boron-rich silicate glass film.

19. (original) The method of claim 18, wherein the predetermined period of time to deposit a boron-rich silicate glass film over the nitride layer is in a range of approximately 3-30 seconds.

20. – 22. (canceled)

23. (new) The method of claim 18 wherein the desired nitride layer consumption is in the range of 15 – 20 Angstroms of the nitride layer.

24. (new) A method comprising:

placing a substrate having a nitride layer in a reaction chamber;
providing a silicon source, an oxygen source and a boron source into the reaction chamber while delaying providing a phosphorous source into the reaction chamber to form a borosilicate glass layer over the nitride layer; and

providing the phosphorous, silicon, oxygen and boron sources into the reaction chamber to form a borophosphosilicate film over the borosilicate glass layer, wherein the deposition conditions and the thickness of the borophosphosilicate film are selected to prevent reaction of the nitride layer with phosphorous from the borophosphosilicate film.

25. (new) The method of claim 24, wherein the borophosphosilicate layer has a thickness in the range of 2000-20000 angstroms.

26. (new) The method of claim 24, wherein the phosphorous source comprises triethylphosphate, and wherein the flow rate of the phosphorous source is in a range of 10-150 milligrams per minute.

27. (new) The method of claim 24, wherein the deposition rate of the borophosphosilicate film is in between 2000-6000 angstroms/minute.

28. (new) The method of claim 24, wherein delaying a phosphorous source into the reaction chamber is performed for a predetermined period of time.

29. (new) The method of claim 28, wherein the predetermined period of time is in the range of 3-30 seconds.

30. (new) The method of claim 24 further comprising annealing the borophosphosilicate glass layer at a temperature in the range of approximately 700 °C to 1050 °C in an ambient selected from the group consisting of steam ambient, water ambient and ambient formed by in-situ reaction of H₂ and O₂.

31. (new) The method of claim 24, wherein a combined weight percent of boron and phosphorous in the borophosphosilicate glass layer is approximately 10 weight percent.

32. (new) The method of claim 24, wherein the borophosphosilicate glass layer comprises approximately 2-5 weight percent boron and approximately 2-9 weight percent of phosphorous.